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(12) **United States Patent**
Hirakata

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(54) **DISPLAY DEVICE AND MANUFACTURING METHOD THEREOF**

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(57) **ABSTRACT**

(51) **Int. Cl.**

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A novel foldable display device or an electronic device using the same, a portable information processor or a portable communication information device, is provided. A foldable display device of which a display panel can be folded n times ($n \geq 1$, and n is a natural number) at a curvature radius of greater than or equal to 1 mm, and less than or equal to 100 mm is obtained. The display device can be miniaturized by being foldable. In addition, in the state where the flexible display panel is opened, display which is unbroken and continuous over a plurality of housings is possible. The plurality of housings can store a circuit, an electronic component, a battery and the like inside as appropriate, and the thickness of each housing can be small.

(52) **U.S. Cl.**

CPC **G06F 1/1652** (2013.01); **G02F 1/133305** (2013.01); **H04M 1/0268** (2013.01); **H05K 1/0281** (2013.01); **H05K 2201/10128** (2013.01)

(58) **Field of Classification Search**

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G06F 1/1616

See application file for complete search history.

9 Claims, 13 Drawing Sheets

